

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
7 October 2004 (07.10.2004)

PCT

(10) International Publication Number
WO 2004/085787 A3

(51) International Patent Classification⁷:
43/10

E21B 37/02,

(74) Agent: **KENNEDYS PATENT AGENCY LIMITED;**
Floor 5, Queens House, 29 St. Vincent Place, Glasgow G1
2DT (GB).

(21) International Application Number:

PCT/GB2004/001193

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 19 March 2004 (19.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0306821.0

25 March 2003 (25.03.2003) GB

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): **SPECIALISED PETROLEUM SERVICES GROUP LIMITED** [GB/GB]; Arnhall Business Park, Westhill, Aberdeen AB32 6TQ (GB).

(72) Inventor; and

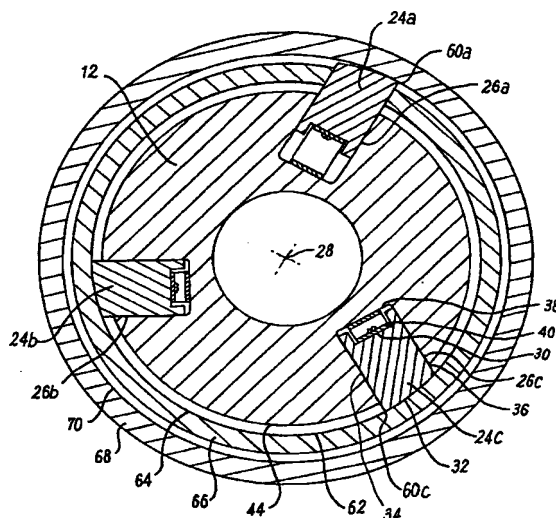
(75) Inventor/Applicant (*for US only*): **TELFER, George** [GB/GB]; 19 Grosvenor Place, Aberdeen AB25 2RE (GB).

Published:

— with international search report

[Continued on next page]

(54) Title: DUAL FUNCTION CLEANING TOOL



(57) Abstract: A cleaning tool and method of cleaning a liner top in a well bore. The tool includes cleaning elements, typically scrapers, which are arranged eccentrically to an axial bore through the tool. The elements are biased outwardly to contact an inner surface of a polished bore receptacle (PBR) at a position with a curvature to match the PBR and to present leading edges of each element when positioned at a surface of a neighbouring casing. The tool may further provide a top dress mill and act as a packer actuator sub. This provides a tool which performs a number of functions on a single trip in a well bore.

WO 2004/085787 A3



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:
7 April 2005

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB2004/001193

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 E21B37/02 E21B43/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 E21B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 667 930 A (HILTON PAUL E ET AL) 2 February 1954 (1954-02-02) figures 1-5	1-13
Y	-----	14
X	US 2 756 968 A (VINCENT EMANUEL ET AL) 31 July 1956 (1956-07-31) column 3, lines 7-25; figures 1,3	1
Y	-----	14
Y	WO 02/35055 A (HOWLETT PAUL DAVID ; SPS AFOS GROUP LTD (GB)) 2 May 2002 (2002-05-02) page 7, line 33 - page 8, line 11; figures 1,3	
A	-----	1,11
	US 6 464 010 B1 (BROWN BILLY L) 15 October 2002 (2002-10-15) column 14, lines 7-50; figures 16,17	
	----- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the International search

4 August 2004

Date of mailing of the international search report

02 FEBRUARY 2005

Name and mailing address of the ISA
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

van Berlo, A

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB2004/001193

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2 203 966 A (OTIS HERBERT C) 11 June 1940 (1940-06-11) column 4, lines 14-39; figures 22-24 -----	1
A	WO 01/63087 A (EDDISON ALAN MARTYN ; ANDERGAUGE LTD (GB)) 30 August 2001 (2001-08-30) the whole document -----	1
P,A	US 6 546 581 B1 (CLUBB MATTHEW ET AL) 15 April 2003 (2003-04-15) paragraph [0035] paragraphs [0046] - [0056]; figures 7-14 -----	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2004/001193

Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-14

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14

Cleaning tool with eccentrically located elements

2. claims: 15-22

Method of cleaning a liner top

INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/GB2004/001193

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2667930	A	02-02-1954	NONE	
US 2756968	A	31-07-1956	NONE	
WO 0235055	A	02-05-2002	AU 1071502 A WO 0235055 A1 GB 2402949 A US 2004011528 A1	06-05-2002 02-05-2002 22-12-2004 22-01-2004
US 6464010	B1	15-10-2002	US 6209647 B1 US 5947203 A AU 6364600 A BR 0012746 A CA 2380245 A1 WO 0107752 A1	03-04-2001 07-09-1999 13-02-2001 02-04-2002 01-02-2001 01-02-2001
US 2203966	A	11-06-1940	NONE	
WO 0163087	A	30-08-2001	AU 3396101 A WO 0163087 A1	03-09-2001 30-08-2001
US 6546581	B1	15-04-2003	GB 2347442 A CA 2298952 A1 DE 10011256 A1 FR 2790409 A1	06-09-2000 03-09-2000 22-02-2001 08-09-2000